

## Amendment and Response

Page 2 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

Filed: 5 April 2001

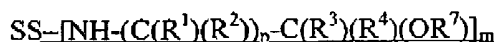
For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. – 31. (Cancelled)

32. (Currently Amended) A functionalized support material having the formula:



wherein:

SS represents a support material;

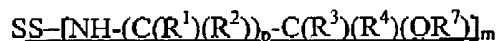
R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are each independently hydrogen or an organic group with the proviso that at least one of R<sup>3</sup> and R<sup>4</sup> is an aromatic group;

The functionalized support of claim 31 wherein R<sup>7</sup> is hydrogen, a protecting group, or an organic group capable of being derivatized;

p is at least 1; and

m is 1 to the resin capacity of the support material.

33. (Currently Amended) A functionalized support material having the formula:



wherein:

SS represents a support material;

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, and R<sup>4</sup> are each independently hydrogen or an organic group with the proviso that at least one of R<sup>3</sup> and R<sup>4</sup> is an aromatic group;

R<sup>7</sup> is hydrogen or an organic group;

p is at least 1; and

m is 1 to the resin capacity of the support material;

## Amendment and Response

Page 3 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

Filed: 5 April 2001

For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

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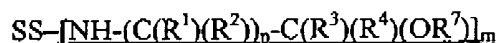
~~The functionalized support of claim 31 which wherein the functionalized support material is in the form of a plurality of particles.~~

34. (Original) The functionalized support of claim 33 wherein each  $R^7$  is the same on any one particle.

35. (Original) The functionalized support of claim 33 wherein the plurality of particles comprise at least two different  $R^7$  groups.

36. (Original) The functionalized support of claim 35 which forms a combinatorial library.

37. (Currently Amended) A functionalized support material having the formula:



wherein:

SS represents a support material;

$R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are each independently hydrogen or an organic group with the proviso that at least one of  $R^3$  and  $R^4$  is an aromatic group;

$R^7$  is hydrogen or an organic group;

p is at least 1; and

m is 1 to the resin capacity of the support material;

~~The functionalized support of claim 31 which wherein the functionalized support material is in the form of a membrane.~~

38. (Original) The functionalized support of claim 37 wherein each  $R^7$  is the same on the membrane.

## Amendment and Response

Page 4 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

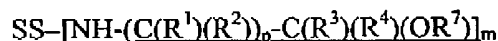
Filed: 5 April 2001

For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

39. (Original) The functionalized support of claim 37 wherein the membrane comprises at least two different  $R^7$  groups.

40. (Original) The functionalized support of claim 39 which forms a combinatorial library.

41. (Currently Amended) A functionalized support material having the formula:



wherein:

SS represents a support material;

$R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are each independently hydrogen or an organic group with the proviso that at least one of  $R^3$  and  $R^4$  is an aromatic group;

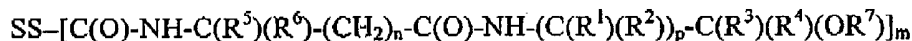
$R^7$  is hydrogen or an organic group;

p is at least 1; and

m is 1 to the resin capacity of the support material;

The functionalized support of claim 31 wherein  $NH-(C(R^1)(R^2))_p-C(R^3)(R^4)(OR^7)$  is bound to the support material through a carbonyl group.

42. (Allowed) A functionalized support having the following formula:



wherein:

SS represents a support material;

$R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are each independently hydrogen or an organic group with the proviso that at least one of  $R^3$  and  $R^4$  is an aromatic group;

$R^7$  is hydrogen or an organic group;

$R^5$  and  $R^6$  are each independently an organic group;

n is 0 to 1;

## Amendment and Response

Page 5 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

Filed: 5 April 2001

For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

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p is at least 1; and

m is 1 to the resin capacity of the support material.

43. (Allowed) The functionalized support of claim 42 wherein p is 1 to 20.
44. (Allowed) The functionalized support of claim 42 wherein R<sup>7</sup> is hydrogen, a protecting group, or an organic group capable of being derivatized.
45. (Allowed) The functionalized support of claim 42 which is in the form of a plurality of particles.
46. (Allowed) The functionalized support of claim 45 wherein each R<sup>7</sup> is the same on any one particle.
47. (Allowed) The functionalized support of claim 45 wherein the plurality of particles comprise at least two different R<sup>7</sup> groups.
48. (Allowed) The functionalized support of claim 47 which forms a combinatorial library.
49. (Allowed) The functionalized support of claim 42 which is in the form of a membrane.
50. (Allowed) The functionalized support of claim 49 wherein each R<sup>7</sup> is the same on the membrane.
51. (Allowed) The functionalized support of claim 49 wherein the membrane comprises

## Amendment and Response

Page 6 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

Filed: 5 April 2001

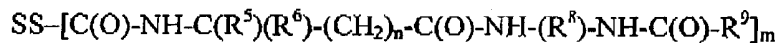
For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

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at least two different R<sup>7</sup> groups.

52. (Allowed) The functionalized support of claim 51 which forms a combinatorial library.

53. (Allowed) A functionalized support having the following formula:



wherein:

SS represents a support material;

R<sup>5</sup>, R<sup>6</sup>, and R<sup>9</sup> are each independently an organic group;

R<sup>8</sup> is an organic connecting group;

n is 0 to 1; and

m is 1 to the resin capacity of the support material.

54. (Allowed) The functionalized support of claim 53 wherein C(O)-R<sup>9</sup> is derived from 4-hydroxymethylbenzoic acid, 4-hydroxymethylphenoxyacetic acid, 4-hydroxymethyl-3-methoxyphenoxybutyric acid, 4-hydroxymethylphenylacetic acid, 4-bromoacetylphenoxyacetic acid, 4-(diphenylhydroxymethyl)benzoic acid, 4-hydroxymethyl-2-methoxy-5-nitrophenoxybutyric acid, phenoxyacetic acid and phenoxybutyric acid analogs of Rink acid and Rink amide linker molecules and Sieber amide linker molecules, 4-sulfamylbenzoic acid, 4-sulfamylbutyric acid, 4-formylphenoxyacetic acid, 4-(4-formyl-3-methoxyphenoxy)butyric acid, 4-formyl-3,5-dimethoxyphenoxyacetic acid, or 3-formylindol-1-ylacetic acid.

55. (Allowed) The functionalized support of claim 53 wherein NH-(R<sup>8</sup>)-NH is derived from ethylenediamine, 1,3-propanediamine, 1,3-diamino-2-hydroxypropane, or 1,6-hexanediamine.

56. (Allowed) The functionalized support of claim 53 which is in the form of a plurality

## Amendment and Response

Page 7 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

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For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

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of particles.

57. (Allowed) The functionalized support of claim 56 wherein each  $R^9$  is the same on any one particle.

58. (Allowed) The functionalized support of claim 56 wherein the plurality of particles comprise at least two different  $R^9$  groups.

59. (Allowed) The functionalized support of claim 56 which forms a combinatorial library.

60. (Allowed) The functionalized support of claim 53 which is in the form of a membrane.

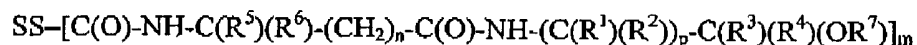
61. (Allowed) The functionalized support of claim 60 wherein each  $R^9$  is the same on the membrane.

62. (Allowed) The functionalized support of claim 60 wherein the membrane comprises at least two different  $R^9$  groups.

63. (Allowed) The functionalized support of claim 62 which forms a combinatorial library.

64. (Cancelled)

65. (Allowed) A functionalized support having the following formula:



**Amendment and Response**

Page 8 of 10

Serial No.: 09/827,107

Confirmation No.: 5006

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For: SOLID PHASE SYNTHESIS SUPPORTS AND METHODS

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wherein:

SS represents a support material;

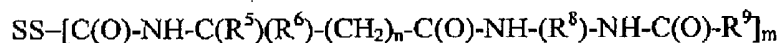
$R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are each independently hydrogen, a (C1-C14)alkyl group, a (C3-C14)cycloalkyl group, or a (C5-C12)aryl group, with the proviso that at least one of  $R^3$  and  $R^4$  is a (C5-C12)aryl group;

 $R^7$  is hydrogen or an organic group;

$R^5$  and  $R^6$  are each independently a (C1-C14)alkyl group, a (C3-C14)cycloalkyl group, or a (C5-C12)aryl group;

 $n$  is 0 to 1; $p$  is 1 to 20; and $m$  is 1 to the resin capacity of the support material.

66. (Allowed) A functionalized support having the following formula:



wherein:

SS represents a support material;

$R^5$  and  $R^6$  are each independently a (C1-C14)alkyl group, a (C3-C14)cycloalkyl group, or a (C5-C12)aryl group;

 $R^9$  is an organic group; $R^8$  is a (C1-C1000)alkylene group; $n$  is 0 to 1; and $m$  is 1 to the resin capacity of the support material.